1st International Conference on Advance and Scientific Innovation (ICASI)

Preface

We are delighted to introduce the proceedings of the first edition of *Joint Workshop KO2PI and International Conference on Advance and Scientific Innovation* (ICASI) 2018 with theme "*Empowering Digital Society through Integration of Multidisciplinarity Aspect*". The technical program has brought researchers and practitioners around the world to a good forum for discussing, leveraging and developing all scientific and technological aspects that are relevant to digital society. This *Joint Workshop KO2PI and ICASI 2018* acquired **388** full papers with 15 Categories, with most papers from Computer Science/Engineering, Information Technology and Education and also authors from almost 25 countries such as Malaysia, Thailand, Laos, South Korea, USA and many more. This Joint Workshop was very special because it involved the collaboration of publications from six other conferences. Thank you especially to:

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We hope that the future *Joint Workshop KO2PI and ICASI* will be as successful and stimulating, as indicated with the contributions presented in this volume.

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The effect of an android-based application on T-Mobile learning model to improve students' listening competence

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The effect of an android-based application on T-Mobile learning model to improve students' listening competence

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Abstract— This paper proposes is to improve the competence of students' listening by applying T-Mobile learning model that on android-based learning application. An approach to designing and developing the interactive mobile application T-Mobile Learning for learner with special needs, suitable for the Android based mobile operating system, is presented. In the literature, these students are referred to as learner with special educational needs. This study uses a quantitative experimental research with pretest group design and posttest control. It consisted of seventy-two students with random sampling technique. The result of the analysis shows that there is a significant difference between the competence of the students' listening which is taught using T-Mobile Learning application with listening based assisted picture.

1. Introduction

The development of information and communication technology (ICT) at present is mobile technology. Mobile technology has changed the direction of the development of information and communication, especially in the way of learning. The use of mobile devices has brought new ways of learning. The use of mobile technology in learning activities will bring students to a variety of critical thinking skills in the problem-solving process so that learning becomes meaningful. Mobile technology can be used in a learning environment regardless of student location or learning location [1].

Living this life can go through various paths, but it must end in a goal. The goal is to make life meaningful. Meaningful is to inherit something valuable. Something worthwhile is something that enables others. Inheritance should be something that enables the next generation to live this life better.

Living well is synonymous with being able to deal with, overcome and solve every problem of life well.

One of the problems in mastering English must master listening skills. Listening ability is a very important competence that must be mastered by those who want to play an important role in this era of globalization. One effective technique for mastering this skill is to apply an analytical strategy [2].

But in fact, not all constructivist learning can be implemented in the learning process. it can be seen in the learning outcomes, as in listening learning process that still uses teacher center learning model so that the presence of the role of teachers or lecturers is still a top priority. Similarly, the provision of learning materials and repetition and discussion is only at face-to-face in the classroom. So that makes the dependence of students to learn listening is only at the time of the course. The presence of smartphones enables communication among teenagers and schoolmates among teens to become easier and unlimited. Mobile learning in various studies can be used in learning, especially in improving listening skills [3].

The authors see the above problems concluded that smartphone and tablet devices can be utilized in learning. This shows that mobile technology if used in learning activities has great potential. Mobile technology can be used as auxiliary technology for thinking tools in supporting learning activities. It has the power to encourage fundamental social interactions to learn and connect with other [4]. Mobile technology supports that good practice for listening is characterized by certain aspects. In the aspect of working practice, students are facilitated to work in groups so that the weakest students will have increased competency [5].

This paper focuses on the how effectiveness of T-Mobile learning model to improve students listening ability. We develop a model to effectively improve the competence students' listening. Using this T-Mobile learning model, it is possible to model the applicated at a signalized intersection, describing the interaction between professor and students. This interaction is a combination of face to face learning and cyber learning. The face to face learning are dictated by the classroom and by the events causing some queue lengths to switch from cyber learning. The continuous variables describing, can be modeled by a blended learning model.

2. Methodology

The development of learning model of T-Mobile learning is learning based on themed material on smartphone as a listening media. Learning model is a design pattern of learning that is designed for the purpose of improving student listening skills. T-Mobile learning application-based is English learning themed using mobile learning applications as a tool (learning media) to improve student listening skills, especially on the listening aspect of vocabulary and listening speed rate. Mobile technology serves to provide a learning experience in social and informatics environments as well as to support unique interactions that are useful for learning [6]. King's research results stated through the media can improve student listening skills. In conclusion it recommends to use the media in listening learning [7].

Listening skills are skills that are part of essential language skills, because listening skills are the foundation for mastering a language. Listening is the process of capturing messages or ideas presented through speech. A full and precise understanding can occur when the listener actively processes what he or she is learning in a linguistic and intellectual way. all of that is as a result of the response to the expression of a speaker. Thus the difference in active-earning and passive-receptive language skills is based on initiatives for communication in the form of language use. In that sense, the listening activity whose primary purpose is the understanding of the use of spoken language, relying on a passive receptive-listening ability.

This paper introduces T-Mobile Learning model in order to Improve competence students' listening (here we call model). It clearly the relevance of the scope of this research was in creating the source of learning [8]. The Effect of T-Mobile learning model considers the development process to get the final prototype. The meaning of a valid, practical and effective learning model, it will be

possible to cycle (repetitive activities), namely: validation, and repeated revision of prototype 1 (which consists of models, learning devices and instruments) and prototype that has met the criteria validation. It is piloted several times in the field until the criteria of practicality / effectiveness, and effectiveness are met. Improved listening is a learning process experienced by students in the process of gaining learning experience in listening comprehension skills. The limitation of the development of this model on the subject listening and test of the quality of the learning model up to the formative evaluation phase [9].

Table 1. Research design

Class	Pretest	Treatment	Posttest
Experiment	O1	X	O2
Control	O3	Y	O4

The variables of this research consist of independent variability of using T-Mobile learning model that is applied to the experimental class and listening based assisted picture learning model applied to the control class.

Table 2. Formulation of learning objectives

Knowledge's dimension	Cognitive dimension					
	C1	C2	C3	C4	C5	C6
Factual						
Conceptual				1	7	2
Procedural				5	3,4	
Metacog					6	8
Nitiive						

The number 1 to 8 shows an indicator competence of listening.

This research used random sampling technique. Randomization was done on the target population of classes that all have an android based mobile phone. The teachers and students have sufficient tools to upload content from the internet [10]. There are two classes, as the control class and the other as the experimental class. The sample consisted of learners whose average age was 20 years with details of 20 women and 17 men in the control class, 16 women and 19 men in the experimental class.
The syntax of T-Mobile learning model consists of 6 stages: 1) Emphasizing the development of capability, 2) Demonstrate the skill (knowledge of Procedure or present the descriptive knowledge of T-Mobile learning application, 3) guide the training, 4) Check the understanding and give feedback and willingness, 5) Provide opportunities for advanced training and application, 6) Taking lessons from the material presented.

Table 3. Syntax design *T-Mobile learning*

Syntax *T-Mobile Learning on Listening Subject*		
Syntax	Learning Strategy	Ability expected
Stage 1 Emphasizes the development of capabilities (ability and willingness).	Apperception and motivation (teacher explains learning objectives, background lesson information, importance of lessons, prepares students for learning)	Students can review background knowledge of the ability and have a high willingness in learning.
Stage 2: Demonstrate skills (Procedural knowledge or present descriptive knowledge of T-Mobile applications)	(Teachers demonstrate the learning correctly or present step by step the correct listening procedure)	Students can understand learning objectives and demonstrate learning outcomes.
Stage 3: Guide training with T-Mobile learning applications	Discussion, Observation etc.	Students can learn well in accordance with the abilities, strengths and learning resources available

Stage 4: Checking for understanding and provide feedback	Discussion, Observation etc.	Students can understand individually on the learning it does.
Stage 5: Provide opportunities for advanced training and deployment	Enrichment of material	Students have already learned development.
Stage 6 Taking lessons from the material presented	Conclusion	Students can know the advantages and benefits of the material they learn.

The discussion also focused only on the material that has been presented. Interesting based learning as it has been described becomes the reason for being applied in the education system [11]. The application is first download by students in the play store. After all students and lecturers get the application, the next is to install on their smartphone-based android.

At this stage both lecturers must register and create a group and create a status (professor) as an admin who can act as administrator controller program it. At the student level must also register as students by asking for barcode (pin) on the lecturer or admin to request permission to join the group of courses that have been made by lecturers. Lecturers or administrators play a major role in the process of learning management. Lecturers will give instruction direct instruction that can be seen and all member in this student. Lecturers have prepared some exercises after the click post then the new students can down loud complete mp3 files along with instructions. Each student will send an answer to the post and comment responses can be seen by all students and discussed together.

Different On the assessment task menu after the lecturer click the post then all new students can down loud material mp3 files along with instructions. Each student will reply according to the instructions given. However, on the menu after the students commented and answered based on the instruction given the lecturer can provide a direct response. There is available scoring assessment facilities that only the student who can see it and will not be seen by other students as well as among other students.

There are additional menu that is notification level one until 3 (grade 1,2,3) which in each level will be designed and assisted with 4 times face-to-face learning in the class that is in 4 weeks. Each student will go through several stages of capacity building based on instruction given by the lecturer and exam questions and can be passed the next level stage after passing the test and get the score above the minimum passing criterion (KKM) above 75/100.

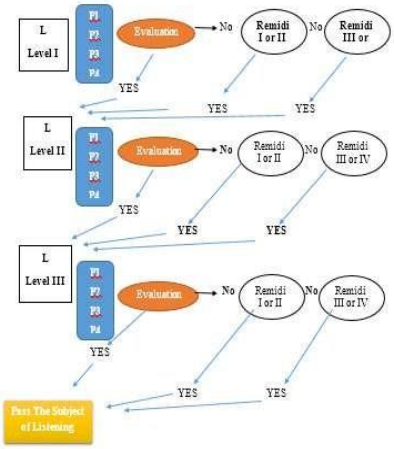

Fig. 1 Application Sequence

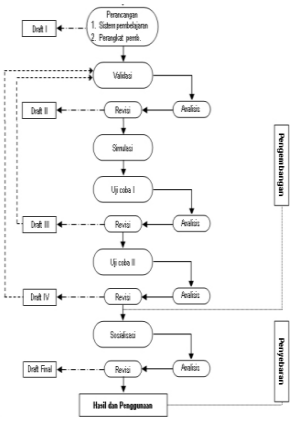

Fig. 2 Research Procedure

The conceptual model of the *T-Mobile Learning* application is presented in Fig. 2.

3. Results and Discussion

A. Actual Data

Data generated from pretest before students are treated and posttest after treatment. The average of the pretest and posttest results is shown in Table. 4

Table 4 The average of pretest and post-test

Test	Learning Model	Mean	Std. Deviation	N
Pretest	T-Mobile	29.5429	4.65481	35
	LBAP	30.1081	5.48120	37
	Total	29.8333	5.06854	72
Posttest	T-Mobile	69.0286	9.22428	35
	LBAP	58.5135	9.13668	37
	Total	63.6250	10.53958	72
Total	T-Mobile	49.2857	21.16679	70
	LBAP	44.3108	16.13889	74
	Total	46.7292	18.85136	144

Table 4 showed that basic learning abilities treated with T-Mobile and LBAP tend to be the same. Furthermore comparing the average pretest and posttest can be seen that there was progress of competence after being treated in each class, posttest T-Mobile Learning value shows higher number.

Increasing the value of pretest to posttest is the influence of the learning model on the listening competence, which through the technique of controlling the learner has never received the previous treatment. The application-based T-Mobile learning model is a learning program that departs from collaborating on a particular theme / topic learning model and then elaborated from various aspects or reviewed from different perspectives of courses taught on campus using applications on mobile / smartphone technology that are mobile computing which uses portable devices over wireless networks.

In T-Mobile learning applications based on android devices are designed with the aim to help the learning process, especially to improve listening skills of students. The application is first download by students in the play store. After all students and lecturers get the application, the next is to install on their smartphone-based android to practice listening. The results of the study Nicholas & Ng. Stated that mobile learning can be used in the learning process [12]. From the available data is done prerequisite test and analyzed. The prescription test shows that the data comes from a normally distributed population.

Table 5 normally distribution test

Normal Parameters[a,b]	Mean	51.8264
	Std. Deviation	15.35242
Most Extreme Differences	Absolute	.092
	Positive	.086
	Negative	-.092
Kolmogorov-Smirnov Z		1.100
Asymp. Sig. (2-tailed)		.178
N		144

The variance of the homogeneity test in the Levene's Test table showed the value (Significance) of Sig. 0.090 where> 0.05 so it is concluded that the variant is the same.

Table 6 Tests of between effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	20262.561[a]	3	6754.187	70.345	.000
Intercept	387191.398	1	387191.398	4032.614	.000
Test	18287.267	1	18287.267	190.463	.000
Learning Model	421.620	1	421.620	4.391	.038
Test * Learning Model	1862.601	1	1862.601	19.399	.000

Error	13442.099	140	96.015
Total	420485.000	144	
Corrected Total	33704.660	143	

Table 6 Showed a significant influence on the competence of students' listening competence scores that are treated with T-Mobile Learning with competence score of students who are treated by LBAP. **There is a significant difference between the competence of the students' listening which is taught using T-Mobile Learning application with listening based assisted picture.**

In T-Mobile learning there are several advantages as described above, when combined with thematic learning will be able to take the following recommendations: a). learning can be designed according to the needs of students, b). learning can be controlled with applications that have been designed through the online network, c). students can improve listening capabilities repeatedly through their respective smartphones, d). learning becomes holistic thorough and related to one another, e). T-Mobile learning technology can provide continuity in a variety of learning experiences that allow learners to make connections to what they observe, gather, access and think from time to time, place, and people, f). T-Mobile learning technology serves to provide a learning experience in social and informatics environments as well as to support unique interactions that are useful for learning[13].

Based on the above description in a rational can be concluded that the learning of T-Mobile learning has many advantages because the learning program that departs from the integrated learning blend of one particular theme / topic and then elaboration of various aspects and mixed on android-based mobile learning applications can be answers to student problems in improving listening skills.

4. Conclusion

Based on research finding, Training should be conducted for teachers to be able to utilize T-Mobile in learning in an effort to improve the competence of learners. **There is a significant difference between the competences of the students' listening which is taught using T-Mobile Learning application with listening based assisted picture.**

This research does not utilize the T-Mobile Learning feature optimally. It is hoped that further research will utilize the T-Mobile Learning feature called parent code to invite parents into the learning group. Utilization of these features is useful to make it easier for members to monitor the learning activities and the level of learning progress of learners.

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